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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,528	12/20/2004	Yuichi Nishihara	405507/0031	6784

7590 03/13/2007
Lawrence Rosenthal
Stroock & Stroock & Lavan
180 Maiden Lane
New York, NY 10038

EXAMINER

BARAN, MARY C

ART UNIT PAPER NUMBER

2857

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/518,528		NISHIHARA, YUICHI	
	Examiner		Art Unit	
	Mary Kate B. Baran		2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 2-6, 13 and 15 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 is/are allowed.
- 6) ☒ Claim(s) 1 and 12 is/are rejected.
- 7) ☒ Claim(s) 7-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20 December 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is sent to correct an improper species requirement. The Attorney elected via a phone conversation and the elected claims are treated on the merits, restarting the period for reply to the mailing date of this action.

Election/Restrictions

2. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

- I. The species best illustrated by page 2 line 11 – page 3 line 3.
- II. The species best illustrated by page 3 line 15 – page 4 line 4.

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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3. The claims are deemed to correspond to the species listed above in the following manner:

Species I, best illustrated by page 2 line 11 – page 3 line 3, corresponds to claims 1, 7-12 and 14.

Species II, best illustrated by page 3 line 15 – page 4 line 4, corresponds to claims 2-6, 13 and 15.

The following claim(s) are generic: currently, no claims are generic.

4. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: Species I claims “comparing a voltage of an output voltage wave of the piezoelectric element after the discharge with the reference voltage for residual quantity detection, and generating a pulse according to a result of the comparison”, whereas species II claims, “generating a detection signal including amplitude information, the amplitude information representing whether an amplitude of a remaining vibration of the piezoelectric element after the discharge is greater than the preset threshold value.”

5. During a telephone conversation with David Schaffer on 21 February 2007 a provisional election was made without traverse to prosecute the invention of species I, claims 1, 7-12 and 14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 2-6, 13 and 15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 12 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106), if a claim recites a judicial exception (i.e., an abstract idea, law of nature or physical phenomenon), the claims must recite either a physical transformation and/or a useful, concrete and tangible result. It is the Examiner's position that the claims are directed to abstract ideas. The claims fail to recite a transformation from one physical state to another. Further, although the claims appear useful and concrete, a tangible result is not claimed. Merely "determining whether the residual quantity of the expendable stored in the expendable container is greater than a preset level" is not sufficient to constitute a tangible result, since the outcome of the determining step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. As such, the subject matter of the claims is not patent eligible.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanaya et al. (U.S. Patent No. 6,517,175) (hereinafter Kanaya).

Referring to claims 1 and 12, Kanaya teaches an expendable container capable of measuring a residual quantity of stored expendable (see Kanaya, column 1 lines 11-13), the expendable container comprising: an expendable tank configured to store the expendable and has a piezoelectric element attached thereto (see Kanaya, column 12 lines 52-66); a detection signal generation circuit configured to charge and discharge the piezoelectric element, and generate a detection signal including cycle information, the cycle information representing a cycle of an output voltage wave of the piezoelectric element after the discharge (see Kanaya, column 13 lines 48-54 and Figure 8A), wherein the detection signal generation circuit comprises: a comparator configured to compare a voltage for residual quantity detection, and generate a pulse according to a result of the comparison (see Kanaya, column 12 line 62 – column 14 line 15); and a signal generator configured to generate the detection signal in response to the generated pulse (see Kanaya, column 13 lines 62-63), wherein the control module is capable of varying the reference voltage for residual quantity detection (see Kanaya, column 13 lines 62-67).

Allowable Subject Matter

8. Claim 14 is allowed.
9. The following is a statement of reasons for the indication of allowable subject matter:

Claim 14 is allowable over the prior art because a computer readable recording medium, the medium storing a computer program for causing a computer to control an expendable container to set a reference voltage for measuring a residual quantity of stored expendable, the expendable container being capable of the measuring, the computer program causing the computer to carry out the functions of: generating a detection signal including information representing a cycle of a remaining vibration of the piezoelectric element after the discharge, in response to the confirmation; receiving the determining whether the residual quantity of the expendable is measurable, in response to the received detection signal; and setting a different voltage from the current setting to the reference voltage for residual quantity detection, and returning a process to the function, in response to the determination that the residual quantity of the expendable is immeasurable is not found, taught or suggested in the prior art of record.

10. Claims 7-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Nishihara teaches an expendable supplies container capable of measuring residual amount of expendable supplies.

(b) Kosugi teaches an expendables container capable of measuring residual amount of expendables.

(c) Kishi teaches a detection apparatus for detecting residual ink quantity in ink cartridge.

(d) Kosugi et al. teach a container for printing fluid material.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Kate B. Baran whose telephone number is (571) 272-2211. The examiner can normally be reached on Monday - Friday from 9:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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1 March 2007


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800